

**Work Order ID 60244**

Tuesday, June 29, 2010 3:47:21 PM

Page 1

Item ID: D3278-3

Accept

Revision ID:

Item Name: Spacer

Start Date: 6/29/2010 Start Qty: 60.00

Required Date: 7/6/2010 Req'd Qty: 60.00

Reference:

Approvals:

Process Plan:

Date: 10-6-29 Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Setup

Start

Stop

Run

Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

Draw Nbr

Revision Nbr

D3278

Rev C

100

0.00



FLOW WATER JET

Waterjet

Memo

0.00

FLOW CNC Waterjet

1-Cut as per Dwg D3278 ☐ Dwg Rev: C ☐ Prog Rev: C ☐ 2-  
Deburr if necessary

Deburr = m-l 10/07/19 (88x)

(88)

110

0.00



QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

FB 10-7-19

120

0.00



QC8- Inspect parts - second check

QC

Memo

0.00

Quality Control

8/10/20

counted  
(X88)

| W/O: |      | WORK ORDER CHANGES |    |      |     |                                     |                          |  |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
| DATE | STEP | PROCEDURE CHANGE   | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |  |
|      |      |                    |    |      |     |                                     |                          |  |
|      |      |                    |    |      |     |                                     |                          |  |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                             |                                 |                |                           |                       |                          |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Chief Eng        | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries

# Work Order ID 60244

Tuesday, June 29, 2010 3:47:21 PM



Page 2

Item ID: D3278-3

Accept



Setup

Start



Revision ID:

Item Name: Spacer

Stop



Start Date: 6/29/2010 Start Qty: 60.00



Cust Item ID:

Required Date: 7/6/2010 Req'd Qty: 60.00

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

130



Small Fab

Small Fab

0.00

Memo

0.00

Small Fab

1-C'sink as per dwg D3278 2-Deburr

*Signature* 6/30/07/27 (87)

140



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

*Signature*

*count*  
(X87)

150



Packaging

Packaging

Identify as per dwg & Stock Location: 45

0.00

Memo

0.00

10/7/27 *Signature* (872)

| W/O: |      | WORK ORDER CHANGES |    |      |     |                                     |                          |  |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
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|      |      |                    |    |      |     |                                     |                          |  |
|      |      |                    |    |      |     |                                     |                          |  |

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|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries

**Work Order ID 60244**

Tuesday, June 29, 2010 3:47:21 PM



Page 3

Item ID: D3278-3

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Start



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Item Name: Spacer

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Required Date: 7/6/2010 Req'd Qty: 60.00

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

160

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/07/28 48

10-7-27  
(48)

| W/O: |      | WORK ORDER CHANGES |    |      |     |                                     |                          |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |    |      |     |                                     |                          |
|      |      |                    |    |      |     |                                     |                          |

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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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|      |      |                                  | Initial<br>Chief Eng        | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries

# Picklist Print

Tuesday, June 29, 2010 3:47:26 PM

Page 1

Work Order ID: 60244

Parent Item: D3278-3

Parent Item Name: Spacer



Start Date: 6/29/2010

Start Qty: 60.00

Required Date: 7/6/2010

Required Qty: 60.00

Comments: IPP A 04.04.19 ☐ New issue ☐ KJ/JLM  
IPP B 07.09.06 Rev C dwg EC Verified by: JLM

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|

MDELRINS0.125

Purchased

No

110

sf

3.0000

0.0344

2.172632

3.1

10-7-14

Black Delrin Sheet .125

## Location

## Loc Qty

## Loc Code

MAT

3

101657

1

104803

2

104803

88

| W/O: |      | WORK ORDER CHANGES |    |      |     |                                     |                          |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |    |      |     |                                     |                          |
|      |      |                    |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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|      |      |                                  | Initial<br>Chief Eng        | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries





| W/O: |      |  | WORK ORDER CHANGES |    |      |     |                                     |                          |
|------|------|--|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP |  | PROCEDURE CHANGE   | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |  |                    |    |      |     |                                     |                          |
|      |      |  |                    |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      |  | WORK ORDER NON-CONFORMANCE (NCR) |                             |                                 |                |                           |                       |                          |
|------|------|--|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP |  | Description of NC<br>Section A   | Corrective Action Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |  |                                  | Initial<br>Chief Eng        | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |  |                                  |                             |                                 |                |                           |                       |                          |
|      |      |  |                                  |                             |                                 |                |                           |                       |                          |
|      |      |  |                                  |                             |                                 |                |                           |                       |                          |

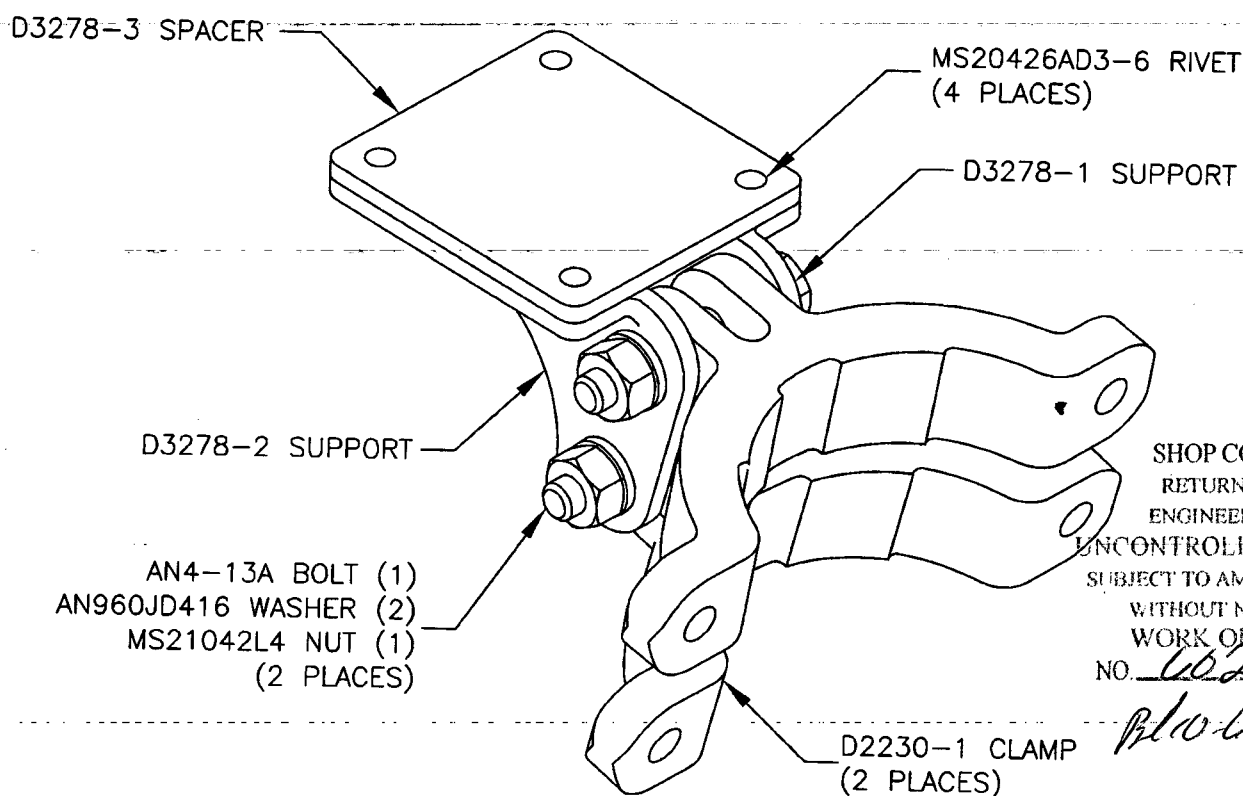
**NOTE:** Date & initial all entries



|                     |                                |   |                        |
|---------------------|--------------------------------|---|------------------------|
| DESIGN<br><i>GP</i> | DRAWN BY<br><i>BC</i>          | DART AEROSPACE LTD<br>HAWKESBURY, ONTARIO, CANADA |                        |
| CHECKED<br><i>B</i> | APPROVED<br><i>[Signature]</i> | DRAWING NO.<br>D3278                              | REV. C<br>SHEET 1 OF 3 |
| DATE<br>07.07.24    |                                | TITLE<br>SUPPORT ASSEMBLY                         | SCALE<br>NTS           |
| A                   | 04.03.03                       | NEW ISSUE   |                        |
| B                   | 05.03.31                       | CHANGE DIM/TOL TO ENSURE FIT                      |                        |
| C                   | 07.07.24                       | CHANGED RIVETS PER PAR #185                       |                        |

**RELEASED**  
*07-08-06*

## D3278-041 SUPPORT ASSEMBLY



SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. *60244*  
*10-029*

| Qty | Part Number  | Description      |
|-----|--------------|------------------|
| X   | D3278-041    | SUPPORT ASSEMBLY |
| 2   | D2230-1      | CLAMP            |
| 1   | D3278-1      | SUPPORT          |
| 1   | D3278-2      | SUPPORT          |
| 1   | D3278-3      | SPACER           |
| 2   | AN4-13A      | BOLT             |
| 4   | AN960JD416   | WASHER           |
| 4   | MS20426AD3-6 | RIVET            |
| 2   | MS21042L4    | NUT              |

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| W/O: |      | WORK ORDER CHANGES |    |      |     |                                     |                          |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |    |      |     |                                     |                          |
|      |      |                    |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

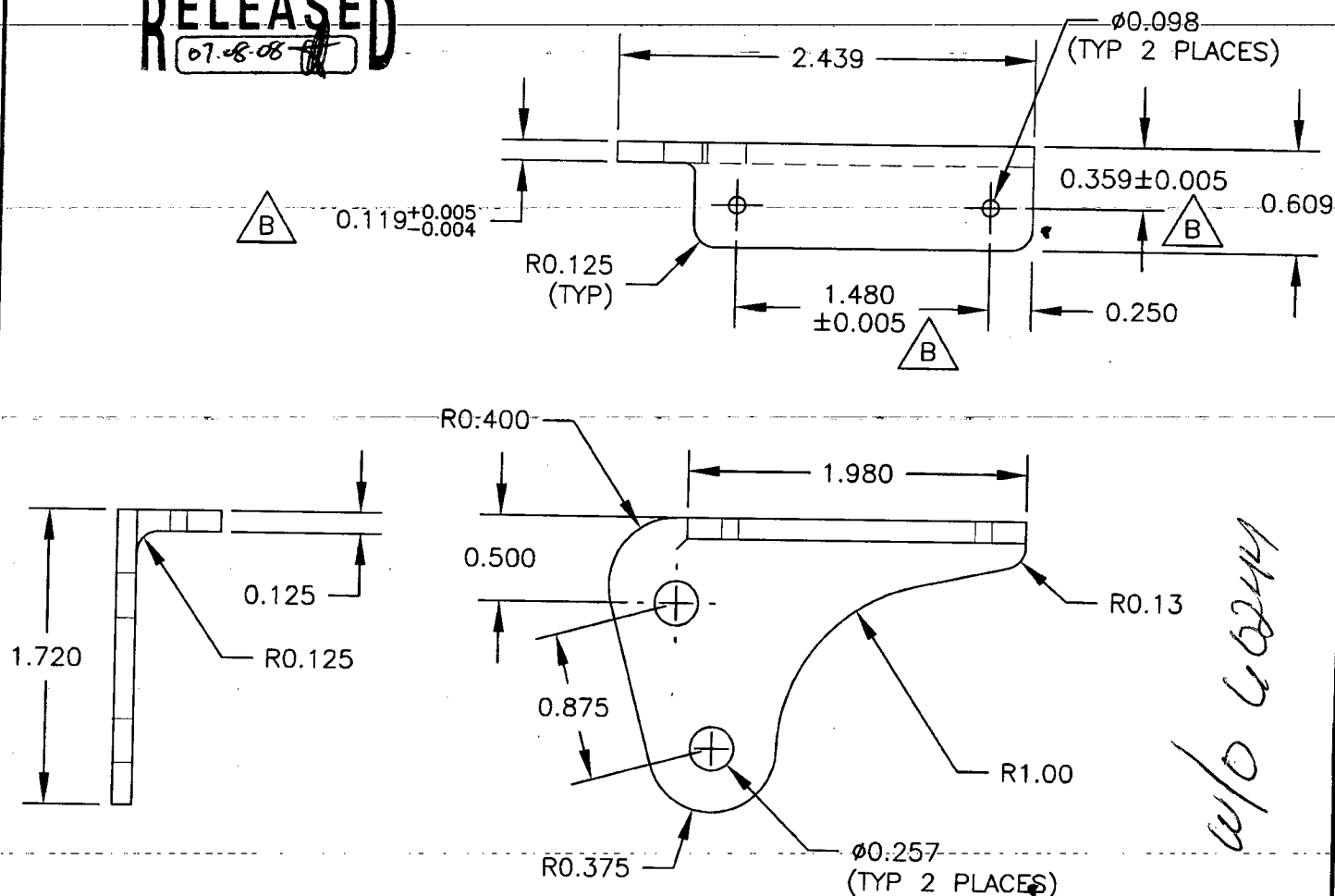
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                             |                                 |                |                           |                       |                          |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Chief Eng        | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries

**DART**

|                      |                       |   |                        |
|----------------------|-----------------------|---|------------------------|
| DESIGN<br><i>gp</i>  | DRAWN BY<br><i>gc</i> | DART AEROSPACE LTD<br>HAWKESBURY, ONTARIO, CANADA |                        |
| CHECKED<br><i>js</i> | APPROVED<br><i>js</i> | DRAWING NO.<br>D3278                              | REV. C<br>SHEET 2 OF 3 |
| DATE<br>07.07.24     |                       | TITLE<br>SUPPORT ASSEMBLY                         | SCALE<br>1:1           |

**RELEASED**  
07-08-08**D3278-1 SUPPORT (SHOWN)****D3278-2 SUPPORT (OPPOSITE)**

- 1) MACHINE PER DWG FILE "D3278-1.SLDPRT"
- 2) MATERIAL: 6061-T6 (OR 6061-T651/T6510/T6511/T62) BAR  
PER AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
PER AMS-QQ-A-200/8 (OR AMS 4160)  
(REF. DART SPEC. M6061T6B)
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED

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|      |      |                    |    |      |     |                                     |                          |
|      |      |                    |    |      |     |                                     |                          |

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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

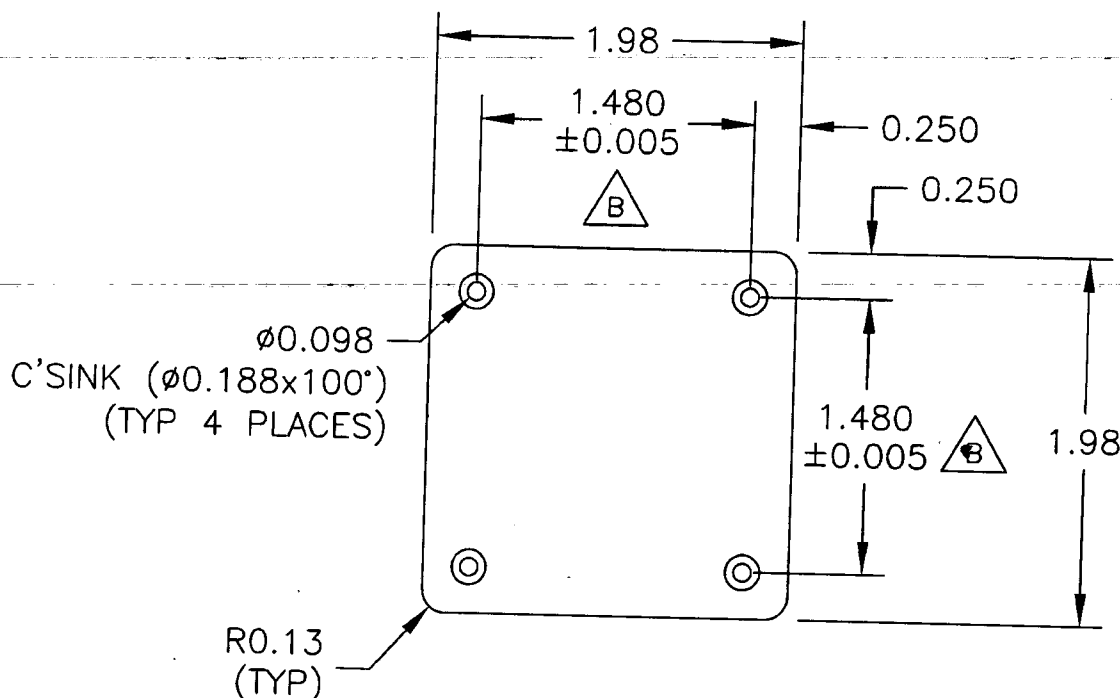
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|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries



|                               |                                |   |                        |
|-------------------------------|--------------------------------|---|------------------------|
| DESIGN<br><i>GP</i>           | DRAWN BY<br><i>SC</i>          | DART AEROSPACE LTD<br>HAWKESBURY, ONTARIO, CANADA |                        |
| CHECKED<br><i>[Signature]</i> | APPROVED<br><i>[Signature]</i> | DRAWING NO.<br>D3278                              | REV. C<br>SHEET 3 OF 3 |
| DATE<br>07.07.24              |                                | TITLE<br>SUPPORT ASSEMBLY                         | SCALE<br>1:1           |

RELEASED  
07.08.08



### D3278-3 SPACER

- 1) MATERIAL: DELRIN II 150E OR ACETRON GP ACETAL  
(REF. DART SPEC. M-DELRIN-B0.125x2.000) OR  
DELRIN II 150E OR ACETRON GP ACETAL  
(REF. DART SPEC. M-DELRIN-S.125)
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED

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|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries